

PATENTREMARKS

Claims 1-18 are currently pending in this application. Claims 15 and 18 have been amended. No new matter has been added by these amendments. Applicant has carefully reviewed the Office Action and respectfully requests reconsideration of the claims in view of the remarks presented below.

Claim Rejections Under 35 U.S.C. §103

Claims 1-5, 11 and 15-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,128,533 (Florio) in view of U.S. Patent No. 6,711,438 (McClure).

Independent claims 1 and 15-18 relate to methods and devices for determining atrial rates using either non-combipolar sensing or combipolar sensing depending on the value of a previously determined atrial rate. For example, method claim 1 recites tracking refractory periods within atrial and ventricular channel signals sensed using a non-combined unipolar/bipolar sensing technique; comparing a previously determined atrial rate against a predetermined threshold set below an atrial tachycardia detection threshold (ATDR) rate for the purposes of determining an atrial rate determination technique for updating the atrial rate; if the previously determined rate does not exceed the threshold, updating the atrial rate based on events detected via non-combined unipolar/bipolar sensing; and if the previously determined rate exceeds the threshold, updating the atrial rate based on events detected using combined unipolar/bipolar sensing.

Florio describes two different types of atrial rate measurements that are used for two distinct purposes: an intrinsic or actual atrial rate, which is determined using all of the P-waves detected in a sensed atrial signal, is used for purposes of mode switching, while a sensed functional atrial rate (described as being less than the intrinsic/actual atrial rate), which is determined using only P-waves outside refractory periods, is used for purposes of pacing. See column 7, lines 12-21 and 40-49. It is significant that regardless of the value of any previously determined intrinsic/actual atrial rate, a current

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intrinsic/actual rate is always determined the same way: using all P-waves detected in atrial signals sensed using only one type of sensing technique, i.e., a single electrode. See column 7, line 3 and figure 7, wherein the process always ultimately returns to block 102 regardless of the outcome of decision block 144. It is also significant that the sensed functional atrial rate is also always determined the same way: using only P-waves outside of refractory periods detected in atrial signals sensed using only one type of sensing technique. In summary, there is no switching or changing of sensing techniques within the respective intrinsic/actual atrial rate and sensed functional atrial rate determination schemes of Florio.

McClure discloses atrial rate determinations that are based on atrial channel signals obtained using combipolar sensing. While unipolar and bipolar sensing techniques are mentioned in the background, McClure does not teach or suggest the use of different sensing techniques based on previously determined atrial rates.

In view of the foregoing, Applicant submits that neither Florio nor McClure teach or suggest the updating of an atrial rate via non-combined unipolar/bipolar sensing when a previously determined rate does not exceed the threshold; and the updating of an atrial rate using combined unipolar/bipolar sensing when a previously determined rate exceeds the threshold, as included in independent claims 1 and 15-18. Accordingly, Applicant requests reconsideration of the §103 rejections of these claims and their respective dependent claims.

Allowable Subject Matter

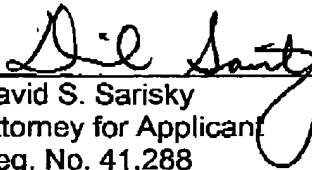
Claims 6-10 and 12-14 were allowed. In view of the remarks presented above with respect to the rejections of independent claim 1, Applicant believes claims 6-10 and 12-14 are allowable without being rewritten in independent form. Applicant, however, reserves the right to amend these claims at a later time.

PATENTCONCLUSION

Applicant has made an earnest and bona fide effort to clarify the issues before the Examiner and to place this case in condition for allowance. Therefore, allowance of Applicant's claims 1-18 is believed to be in order.

Respectfully submitted,

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Date

  
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